Wildlife Corridors: Front Line Routes in the War on Climate Change?

Zach Chmael

The winter sun barely peeks over the horizon line, beginning to illuminate our beautiful surroundings with its first strands of light, as we reach our intended destination. Blackwater National Wildlife Refuge is a large, impressive swath of forested uplands, open fields, and sodden wetlands perched precariously on the shores of our nation's largest estuary, the stunning but imperiled Chesapeake Bay. The only sound is that of the tires meeting packed snow and ice as we roll along the narrow road through the loblolly pine forest towards the frigid waterfront. Emerging from the trees, I can see the sun's reflection upon the water, the bright orange blaze standing in stark contrast to a sea of white to the side, as if the scene had been pulled straight from a "Paint By Numbers" book. I am pleasantly surprised by the extent of the snow covering the landscape.

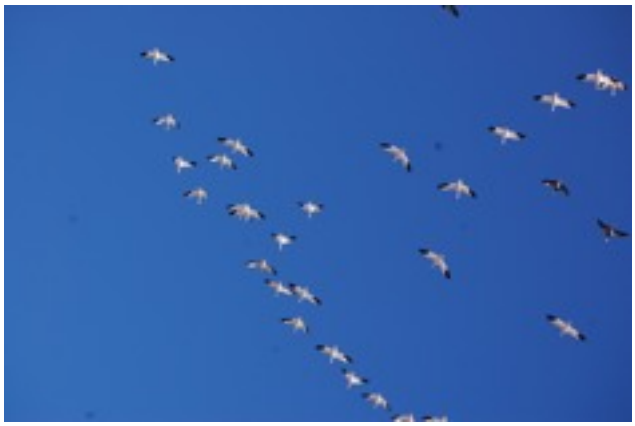

Photo Credit: George Chmael

We've slowed considerably now, but as we glide closer, the optical illusion comes to an abrupt end and I suddenly distinguish thousands of individual birds, impressively large tundra swans of brilliant white, that have amassed together to form the mirage of a thoroughly snow-covered landscape. Immediately to their left, the icy surface of the Bay and surrounds is littered black and brown with a multitude of other bird species - Canada geese, pintail ducks, mallards - far too many types to distinguish or even begin to count. As we step from the car, we are greeted by the intense but surprisingly soothing sound emanating from the thousands of waterfowl congregated closely together. Constantly changing in pitch and beat, the bird symphonies merge together in my brain as I stand shivering in the arctic-like morning air. To the right, a pair of bald eagles stand like sentinels from their perch high atop a nearby tree. Suddenly, as if on cue from some hidden movie director producing an award-worthy National Geographic special, the birds erupt into the air, blocking out the orange of the sun with great waves of white, brown, and gray. The sky is filled with the birds' nearly deafening and clamorous calls and the impossibly powerful sounds of beating wings as they take multiple passes above their icy roost before once again obeying the imaginary director of this quintessential nature film and landing in synchrony back onto the surface of the now sunlit water. I am awe-struck.

Blackwater NWR, located on Maryland's Eastern Shore approximately 12 miles south of Cambridge in Dorchester County, was established in 1993 as a sanctuary for bird species traveling along a migratory route known among ornithologists and birders as the Atlantic Flyway. This flyway is a passage or "wildlife corridor," as referred to by

conservation scientists, that is utilized by avian and other species traveling across the top and up and down the Eastern Seaboard of North America. This bird "super highway" extends from the offshore waters of the Atlantic Coast west to the Allegheny Mountains where, curving northwestward across northern West Virginia and northeastern Ohio, it continues across the prairie provinces of Canada and the Northwest Territories to the Arctic Coast of Alaska. The corridor encompasses several primary and secondary migration routes and is of great importance to migratory songbirds, waterfowl, including the tundra swans, Canada geese, and other ducks seasonally found at Blackwater, as well as other bird species. The coastal route of the Atlantic Flyway follows the shore line and has its northern origin in the eastern Arctic islands and the coast of Greenland and southern terminus on the coast of South America. Many of its most frequent commuters traverse a nearly 2,000 mile route not once, but twice, each year.

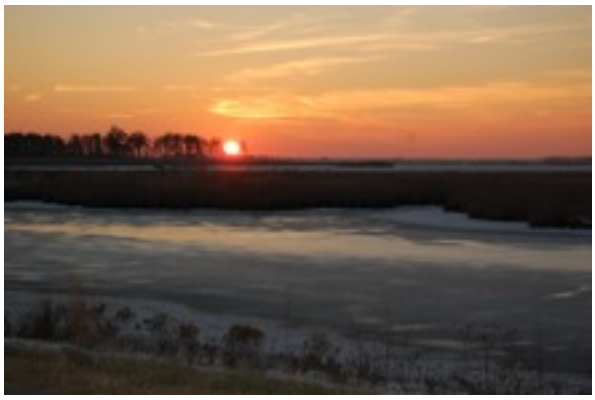

Photo Credit: George Chmael

Three additional flyways blanket the United States and complete the North American migratory bird highway system - the Mississippi, Central, and Pacific Flyways. It is along these vital corridors, as well as others spread across the oceans and continents of our planet, that an estimated 1800 long-distance migratory species of the world's 10,000 bird species, travel each year. How significant are these numbers? Consider that an almost imperceptible 41 million waterfowl traveled the four United States' flyways in 2010, an encouraging number, by the way, that stands at 21% above the long term average, and you begin to get a sense of the magnitude.

These incredible trans-ecosystem journeys cannot be successfully completed without the aid of appropriately-spaced refuges along the way. These large swaths of land/water confluences serve as both lodging and restaurant for weary travelers needing to recharge as they seek to successfully complete their adventure and thereby ensure the continuation of their species. Blackwater NWR is but one of many stepping stones along the Atlantic Flyway. Like each refuge to the north and south, its importance cannot be overstated. Spanning over 27,000 acres of freshwater impoundments, brackish tidal wetlands, open fields, and mixed evergreen and deciduous forests, the refuge seeks to appeal to travelers of all kinds. Annually, some 250 different bird species take full advantage of its offerings and, during the winter migration, it serves as a home away from home to over 35,000 geese and 15,000 ducks, among others.

Leo Miranda-Castro, Supervisor of the Chesapeake Bay Field Office of the United States Fish and Wildlife Service, has devoted his life to wildlife preservation and knows full-well the value of these corridors. "The stopover areas are critical for the survival of migratory birds," he revealed after greeting me with a huge smile at the start of our morning together at his offices in Annapolis, Maryland on the day following my

Blackwater experience. “That is one of the main reasons we have so many wildlife refuges on the East Coast. Refuges are located in areas spanning from Maine all the way down to Puerto Rico, following the migratory patterns of the various species . . . they are important areas to manage for all species of migratory birds.”

Leo’s unwavering optimism shined throughout the interview but he did not mince words when I asked about the future of these corridors and the well-being of their magnificent voyagers. “Right now some of the threats are quite obvious such as development and its encroachment into the National Wildlife system. Those buffer zones that are needed to protect, for example, the water quality coming into the Refuge, are shrinking. We are also facing another threat at the global scale, sea level rise and climate change, to which we need to react and start managing these habitats accordingly. In the Chesapeake Bay . . . they are suffering due to the effects of sea level rise,” his bright smile fading a bit before he enthusiastically launched into an explanation of hopeful efforts occurring at the local, regional and national levels to combat the impacts of climate change. “At the National Wildlife Refuge level, one of the things that we are doing is working to understand how the system is behaving, as well as predict how it will react. For example, we have one model that we are using called SLAM (Sea Level Rise Affecting Marshes). We are using it to get an idea of what might happen in 50 years, 100 years. That way we can design habitat restoration projects within the protected lands, and even unprotected lands adjacent to the refuge. Our goal is to do the best job we can with the information at hand, and work towards understanding the changes better to react accordingly in the future.”

Photo Credit: George Chmael

I am at once struck by the infectious enthusiasm of this frontline warrior and the daunting scope of his battle for the future of these refuges and the animals whose futures are inexorably entwined with them. His agency’s ability to secure and protect these places that together form critical wildlife corridors and also adapt management techniques in the face of the seemingly unstoppable forward march of sea level rise will determine whether the majesty of my December morning will thrill my future son or daughter or if it will be forever lost to future generations. And then I realize - we are all soldiers in this fight. We must arm individuals with knowledge and partner across genders, generations and cultures to change minds and habits, and win this battle for our refuge system, our wildlife partners. We must win this battle for ourselves as we wage the war to effectively address climate change. Sign me up.

To learn more about the importance of wildlife corridors and how you can become involved in the effort to preserve and enhance these vital wilderness features, please visit http://freedomtoroam.org/.

For more general information on the National Wildlife Refuge System, see http://www.fws.gov/refuges/.

Further information on Blackwater National Wildlife Refuge can be found at http://www.fws.gov/blackwater/.